Patchwork patterns are relatively easy to realize. In addition of their aesthetic designs they are able to illustrate numerous symmetry properties.

Plane models exhibit the 2-dimensional translational repetition: lattice, primitive unit cells, conventional unit cell, n-fold rotation points, reflection lines, glide lines...

When gathered in space, the patchwork patterns are prime candidates to exemplify the 3-dimensional point symmetry: n-fold rotation axes, n-fold rotoinversion axes, reflection planes, inversion centres... It is also possible to show basic group theoretical properties: subgroups, conjugate symmetry elements and subgroups, orbits, bipoint and multipoint representations and characters, enclosed polygons and polyhedrons, distance and angle special relations, colour symmetry...

The authors will present patchwork patterns (2-and 3-dimensional) made of beautiful African " waxes".

PS–19.01.16 SOME PROBLEMS IN MAKING MICRO-COMPUTER PROGRAMS FOR THE TEACHING OF CRYSTALLOGRAPHY AND MATERIALS SCIENCE.
K.M.Crennell*, ISIS Instrumentation Division, Rutherford Appleton Laboratory, UK

The Institute of Materials in the UK publishes a series of micro computer based programs to teach various aspects of materials science including introductory crystallography and electron microscopy. The programs are intended to be used interactively by first year university students for individual learning, or can make effective displays for teachers during lectures.

The programs are all written by academics engaged in teaching or research in the UK. The problems of producing such programs are described. They must be very 'user friendly'; computing complexities must not obscure the scientific message for the student who will rapidly lose interest if the programs are too difficult to use. At the same time, the programs must be robust and very well tested since they must work anywhere without help from their authors. A further difficulty is that programs written for one popular microcompter will not run on another, due to the lack of standardisation in the graphics.

These problems are illustrated with examples from the introductory crystallographic programs 'Atomic Packing and Crystal Structure' and 'Point and Plane Groups'.

